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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/416,270 10/12/99 CHANG

Y 400396/YPLEE

EXAMINER

IM22/0828

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WASHINGTON DC 20005

DOVE, T

ART UNIT

PAPER NUMBER

1745

DATE MAILED:

08/28/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.
09/416,270

Applicant(s)
Chang et al.

Examiner
Tracy Dove

Art Unit
1745



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 Jun 2001
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ 20) ☐ Other:

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DETAILED ACTION

This Office Action is in response to the communication filed on 6/11/01. Applicant's arguments have been considered, but are not entirely convincing. The amendment introduces new matter into the claims 1, 7, 13 and 14. This Action is made **FINAL**, as necessitated by amendment.

Specification

The objections to the disclosure have been withdrawn.

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for aluminum and copper, does not reasonably provide enablement for a metal or a metal foil. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Claims 1, 7, 13 and 14 recite "a positive collector comprising *a metal* having..." and "a negative plate including a negative collector comprising [or consisting of] *a*

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metal foil free of holes". The subject matter "a metal" and "a metal foil" are broader in scope than the subject matter described in the specification.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-7, 9-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kejha, US 5,750,289.

Kejha teaches a lithium polymer battery including a positive current collector 21 with a plurality of holes 22 therethrough. The current collector is a metallized plastic with the metal being copper (coating 23). The metal supports the current collecting and carrying capabilities of the battery without closing the holes 22. See col. 3, lin 43; col. 3, lin 54-col. 4, lin 7. The collector 21 is coated with layers of cathodic material. See col. 4, lin 11-15. The battery also includes a layer 25 of polymeric electrolyte, a layer 26 of anodic material applied to the polymeric electrolyte and a layer 28 of metallized expanded or perforated plastic film. See col. 4, lin 21-33. Note Fig. 1. Claim 1 teaches the metal may be copper.

Kejha does not explicitly teach the negative electrode includes a negative collector and a negative active material.

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However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because it is well known in the art to use an alkali metal foil as the negative electrode. The alkali metal foil (i.e. lithium metal) functions as both the current collector and the active material.

Response to Arguments

Applicant's arguments filed 6/11/01 have been fully considered but they are not persuasive.

KEJHA

Applicant argues Kejha does not teach every element of the claimed invention.

Specifically, Applicant argues that Kejha does not describe a separator within a battery.

Examiner stated "the battery also includes a layer 25 of polymeric electrolyte". It is well known

* | in the art the solid polymer electrolyte material also functions as the separator of the battery. In col. 3, lines 41-50 Kejha teaches that the if the battery has a liquid electrolyte, the polymer is replaced by a porous membrane with liquid electrolyte. Furthermore, Kejha teaches the battery may include insulating layers. Any skilled artisan would know that a battery must have a separator between the positive and negative electrodes because contact between the positive and negative electrode would result in a short circuit.

Applicant further argues that Kejha does not describe any collector comprising a metal having a plurality of openings or any combination of collectors in which one collector has holes

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and the other collector does not. Applicant argues there is no indication in the recited passage on page 8 of the amendment that there are any holes whatsoever in any metal film of the current collector and Figure 1 is entirely ambiguous as to whether the metal covers the holes in the plastic film.

Examiner disagrees with Applicant analysis of Kejha. Kejha does describe a collector comprising a metal having a plurality of openings and a combination of collectors in which one collector has holes and the other collector does not. Kejha teaches the positive collector has a plastic ribbon with a plurality of holes therethrough. The plastic ribbon is coated with a metal which may be coated on *one or both sides* of the ribbon. **The coating does not close the holes.** See col. 4, lines 5-7. Therefore, the metal coating must have holes which correspond to the holes in the plastic ribbon. Hence, Kejha teaches a collector comprising a metal having a plurality of openings. Furthermore, Kejha teaches the negative electrode may be an alkali metal foil. The alkali metal foil functions as a current collector without holes. Hence, Kejha teaches a combination of collectors in which one collector has holes and the other collector does not.

The clarity of Figure 1 regarding the presence of holes in the metal coating is irrelevant because the body of the patent discloses **the coating does not close the holes**. Examiner points out that it is improper to state "Figure 1 of Kejha is entirely ambiguous as to whether the metal covers the holes" and then argue "the coating...does not "close" the holes clearly means that the metal film does not fill up the holes as is apparent from Kejha's Figure 1 and the absence of any

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metal on the sidewalls of the holes". Figure 1 cannot be both "entirely ambiguous" and "apparently" support applicant's argument.

Applicant argues the background of Kejha makes clear that the entire purpose of the collector structure described in Kejha is to reduce weight and size by eliminating a solid metal plate. Examiner disagrees with Applicant's analysis of the Kejha reference. The background contains no such teaching.

Examiner agrees Kejha does not teach a negative electrode including a negative collector and a negative active material. However, this limitation is consider obvious because one of skill would know that an alkali metal foil as the negative electrode would function as both the collector and the active material.

Examiner points out that Applicant rebuts the rejection of the claims by arguing that if the negative electrode included a metallized plastic layer, the metal coating would have holes. Since the layer has holes it would not anticipate the claimed invention which recites "a negative collector...free of holes". Therefore, Applicant contradicts the previous argument that the metallized plastic layer does not have a metal coating with holes.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e.,soaking a bi-cell in solvent such as ether) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

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SATAKE ET AL.

The 35 U.S.C. 102(e) rejection of claims 1-5 in view of Satake et al has been withdrawn. Thus, Applicant's arguments regarding the Satake et al reference are moot.

Allowable Subject Matter

Claims 2, 8, 14 and 16 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claims are directed toward a lithium polymer battery comprising a copper foil negative collector free from holes and a metal positive collector having a plurality of openings.

The prior art does not teach a lithium polymer battery comprising a copper foil negative collector free from holes and a metal positive collector having a plurality of openings. Kejha teach a lithium polymer battery comprising a foil negative collector free from holes and a metal positive collector having a plurality of openings. However, Kejha teaches the foil negative collector is an alkali metal or alkali metal alloy foil.

Conclusion


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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached *Monday, Wednesday & Thursday from 7:30 AM - 7:00 PM*. My supervisor is Gabrielle Brouillette, who can be reached at (703) 308-0756. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax number is (703) 305-3599.

August 23, 2001


CAROL CHANEY
PRIMARY EXAMINER